

5 1. (ORIGINAL) A method of drilling a wellbore, comprising:

obtaining raw drilling data and information which collectively represents captured and stored organizational drilling experience including drilling knowledge and drilling experience;

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providing an ontology of defined concepts and relationships which relate to and describe drilling operations;

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organizing said raw drilling data and information into a database in accordance with said ontology and in a data processing format;

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providing an interface constructed of data processing instructions in a data processing format for receiving operator queries based upon user-specified criteria and for relevant or analogous knowledge or experience as an output in a human-readable format;

loading said database and said interface into at least one data processing system;

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receiving at least one user query relating to a particular drilling situation and in user-specified criteria;

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utilizing said at least one data processing system to retrieve from said database relevant or analogous drilling knowledge or experience utilizing said ontology and said user-specified criteria;

utilizing said interface to provide said relevant or analogous drilling knowledge or experience to an operator;

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utilizing said relevant or analogous drilling knowledge or experience to make drilling decisions during drilling operations.

5 2. (ORIGINAL) A method of drilling a wellbore, according to claim 1, wherein said ontology is a descriptive logic.

3. (CANCELLED)

10 4. (ORIGINAL) A method of drilling a wellbore, according to claim 1, wherein said ontology is composed of a plurality of base concepts and base relationships which may be combined to construct more complex concepts and complex relationships.

15 5. (ORIGINAL) A method of drilling a wellbore, according to claim 1, wherein said raw drilling information is organized in a subsumption hierarchy.

6. (ORIGINAL) A method of drilling a wellbore, according to claim 1, wherein said raw drilling information is organized in accordance with at least the following concept categories:

20 historical experience;

wellbore environment factors; and

25 downhole equipment.

7. (ORIGINAL) A method of drilling a wellbore, according to claim 6, wherein said historical experience includes a plurality of factors which describe a particular historical drilling situation and associated outcome.

30 8. (ORIGINAL) A method of drilling a wellbore, according to claim 6, wherein said wellbore environment factors include at least one of the following factors:

drilling fluid properties;

35 rock properties; and

formation attributes.

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5 9. (ORIGINAL) A method of drilling a wellbore, according to claim 6, wherein said
down hole equipment category includes at least one of the following items:

bottomhole assembly components; and

10 drill bit components.